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Executive Micro-CT Low-resolution Summary for Catheter Parts

Micro CT contacts:

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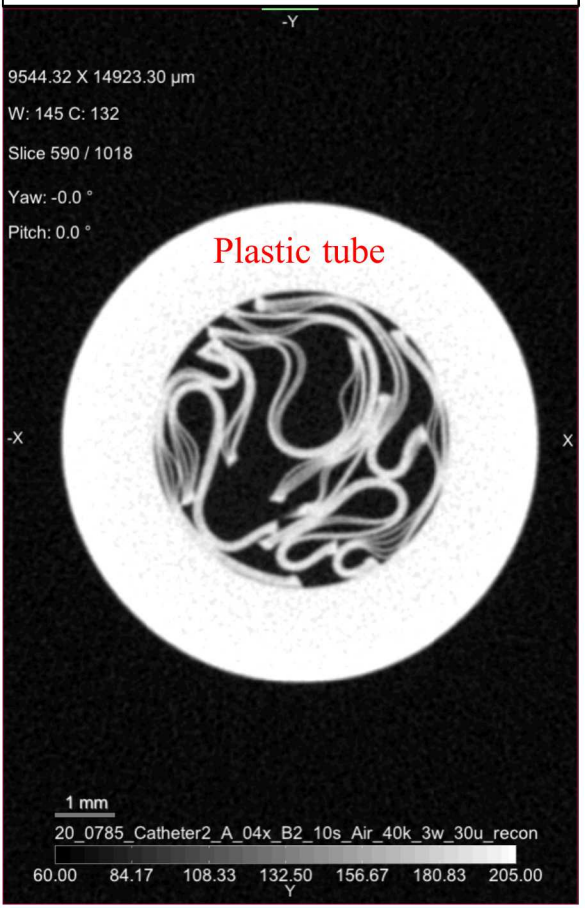
Executive Micro-CT Low-resolution Summary for Catheter Parts

- Data scans were performed on a Zeiss Xradia 520 Versa operated by departments 1851 (Philip Noell) and 1819 (James Griego).
- Sample 1, 2, and 3 Catheters were scanned with a 30 um pixel (low-resolution) to get an overall view of the part (this does not include the entire height of the catheter assembly).
- The following slides show the Z, Y, and X slice plane at a specific cross-hair location.
- We can perform a higher resolution scan down to ~0.7 um pixel size including a limited field of view of ~700 um wide.
- Slide 5 has some requests for the customer for further scan locations.
- These catheters were provided to us by Simon Dunham of Weill Cornell Medical College (simondunham@gmail.com)
- Additional contact: Varun Kashyap (varunkash.u@gmail.com)

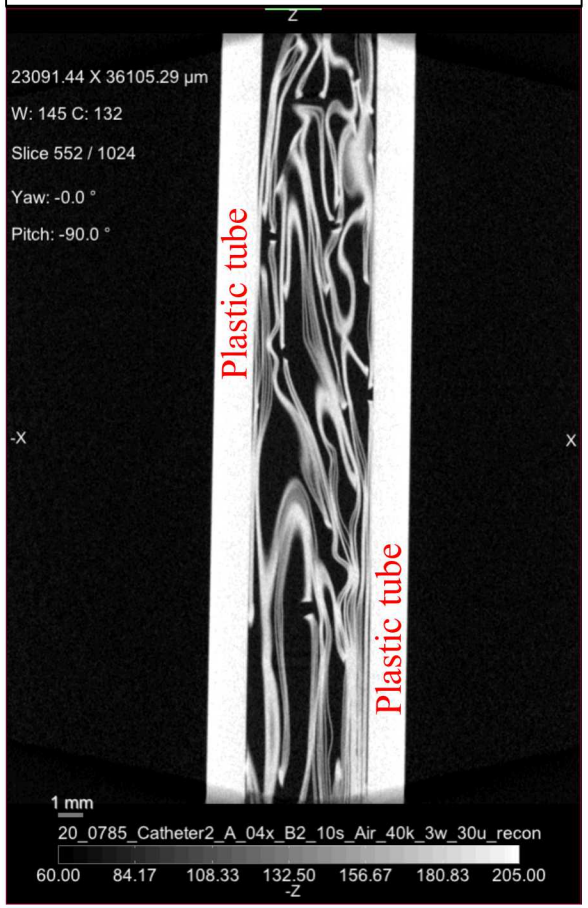
Sample Name: Sample 2 (soft robotic actuator) low-resolution

- Pixel size of scan: 30 um
- Scan ID: 20_0785_Catheter2_A_04x_B2_10s_Air_40k_3w_30u_recon (~2.9 hr scan)
- Basic image description: Low Z material/air- dark pixels/regions, high Z material- bright pixels/regions
- Projection #: 801 (~0.5 the required # of projections for full field of view tomography, could run this data through OptiRecon, but the images are relatively clear at this projection #)

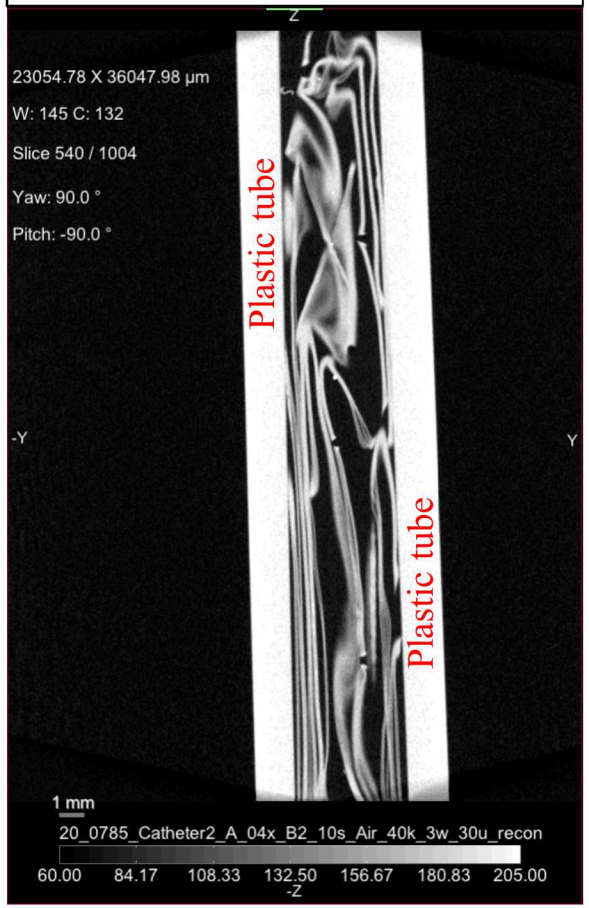
Z-Plane Slice #590



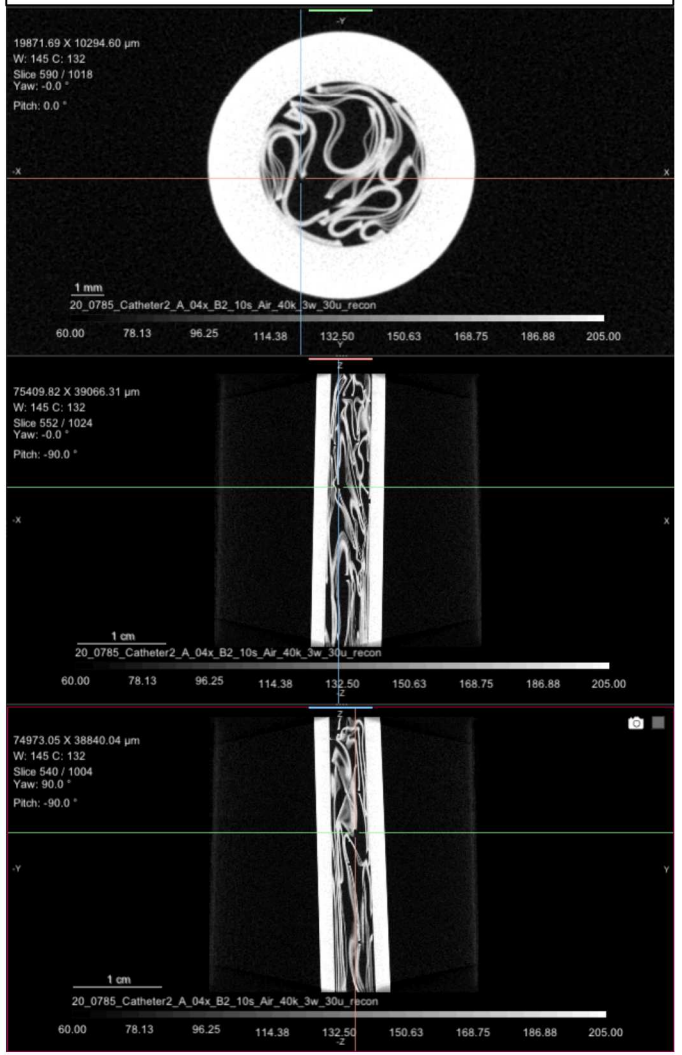
Y-Plane Slice #552



X-Plane Slice #540



Slice views with Cross-hair shown

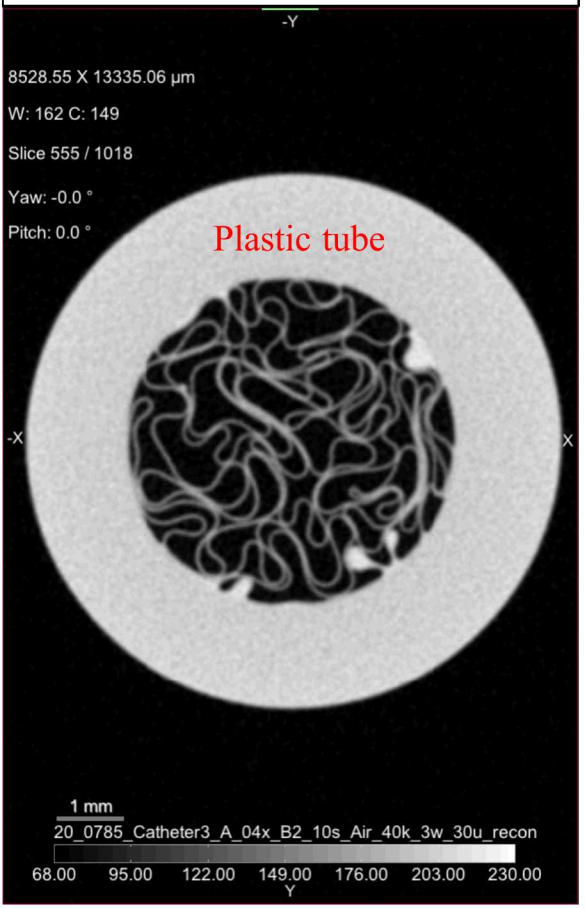


All data post-processing performed with: DragonflyPro (v3.1). Scans and reconstructions performed on a Zeiss Xradia 520 Versa microCT.

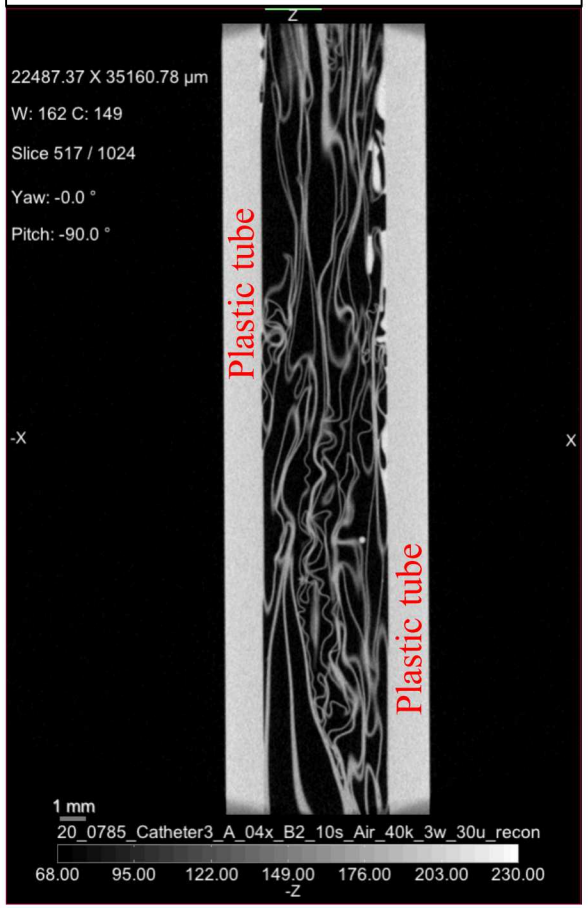
Sample Name: Sample 3 (conventional balloon) low-resolution

- Pixel size of scan: 30 um
- Scan ID: 20_0785_Catheter3_A_04x_B2_10s_Air_40k_3w_30u_recon (~2.9 hr scan)
- Basic image description: Low Z material/air- dark pixels/regions, high Z material- bright pixels/regions
- Projection #: 801 (~0.5 the required # of projections for full field of view tomography, could run this data through OptiRecon, but the images are relatively clear at this projection #)

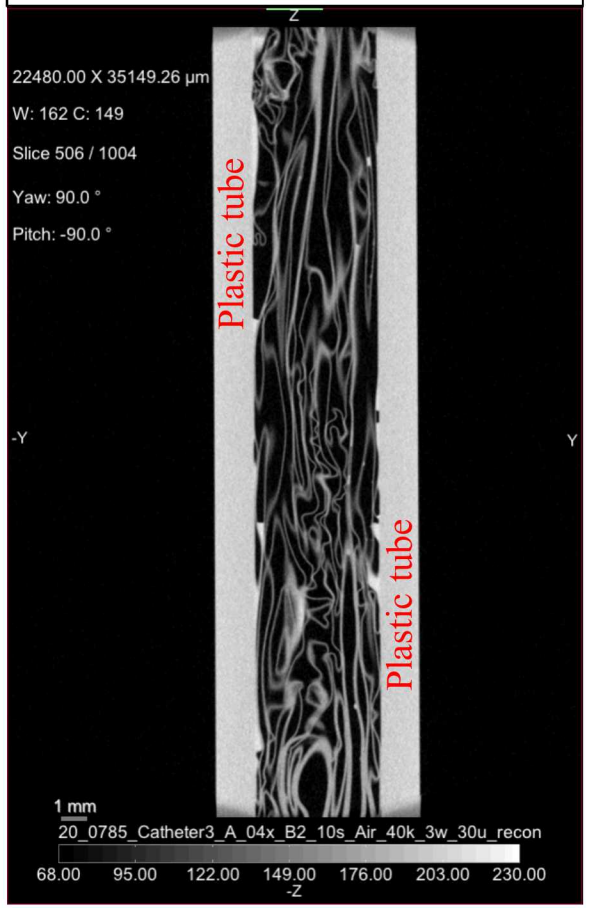
Z-Plane Slice #555



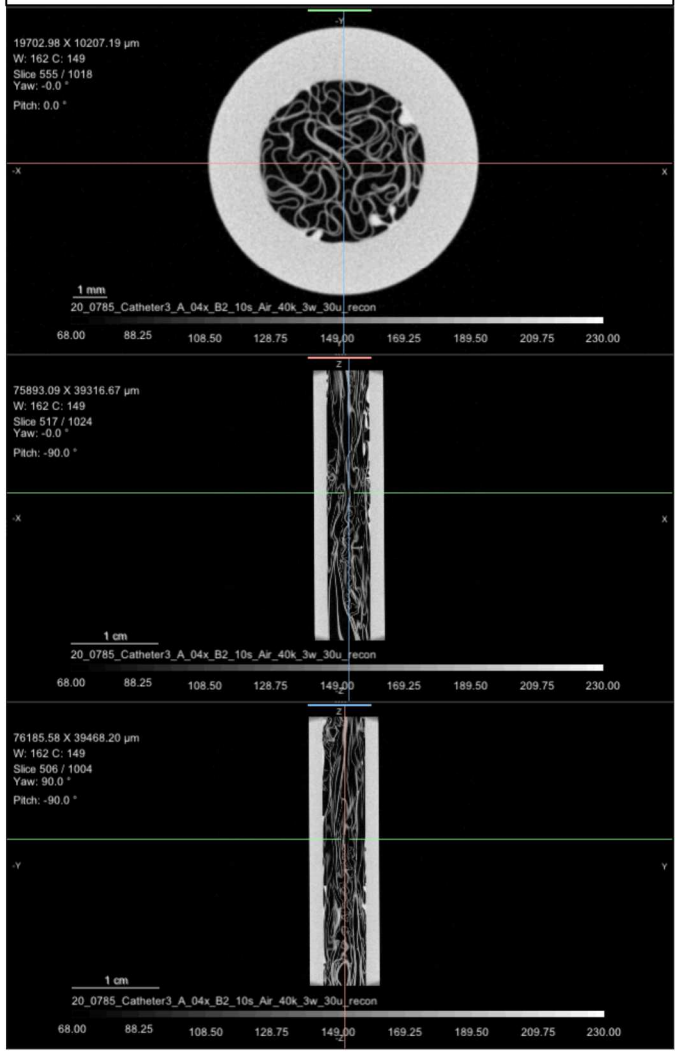
Y-Plane Slice #517



X-Plane Slice #506



Slice views with Cross-hair shown

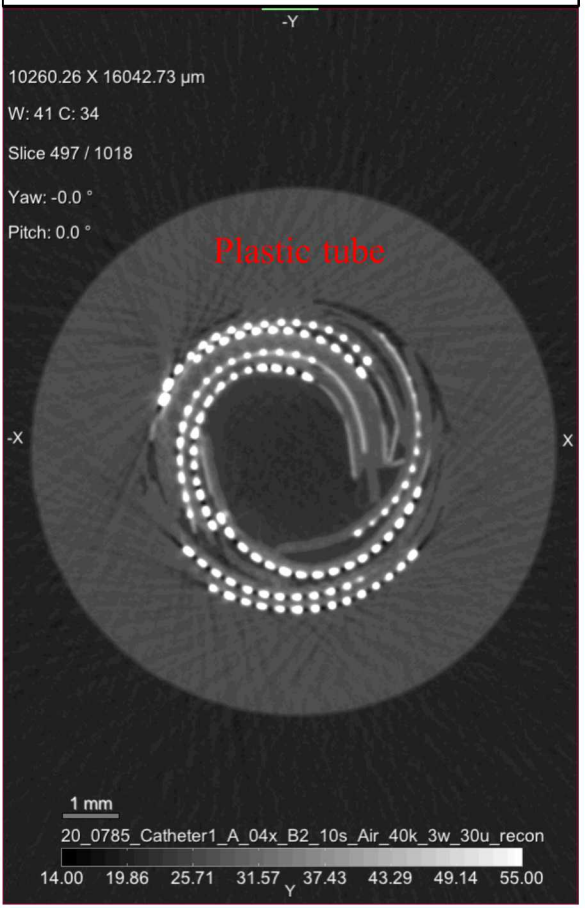


All data post-processing performed with: DragonflyPro (v3.1). Scans and reconstructions performed on a Zeiss Xradia 520 Versa microCT.

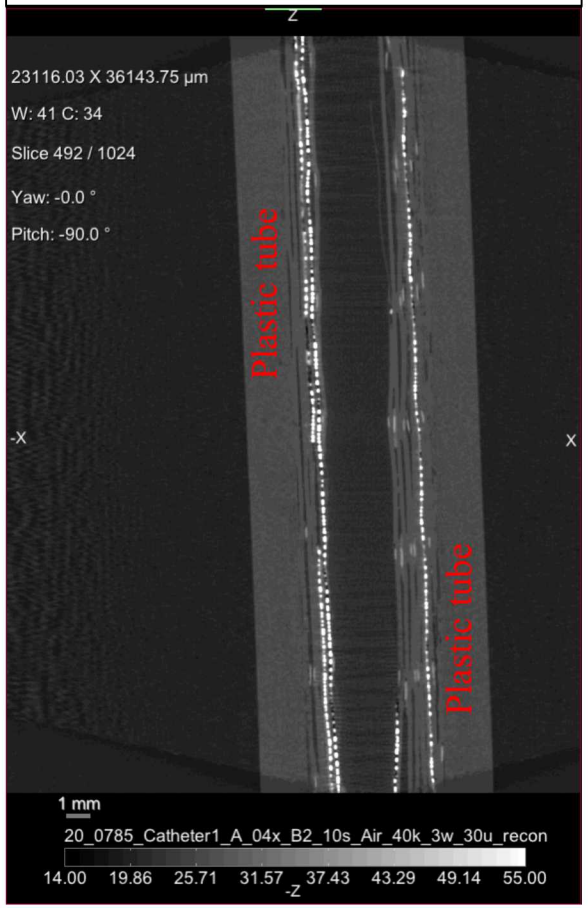
Sample Name: Sample 1 (with electronics) low-resolution

- Pixel size of scan: 30 um
- Scan ID: 20_0785_Catheter1_A_04x_B2_10s_Air_40k_3w_30u_recon (~2.9 hr scan)
- Basic image description: Low Z material/air- dark pixels/regions, high Z material- bright pixels/regions
- Projection #: 801 (~0.5 the required # of projections for full field of view tomography, could run this data through OptiRecon, but the images are hopefully clear enough to locate a region for a higher resolution scan)

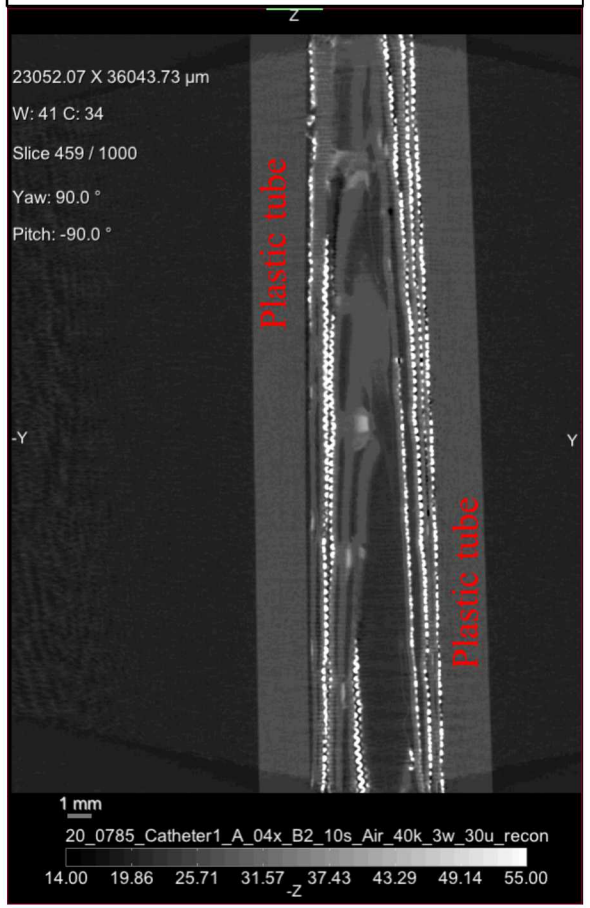
Z-Plane Slice #497



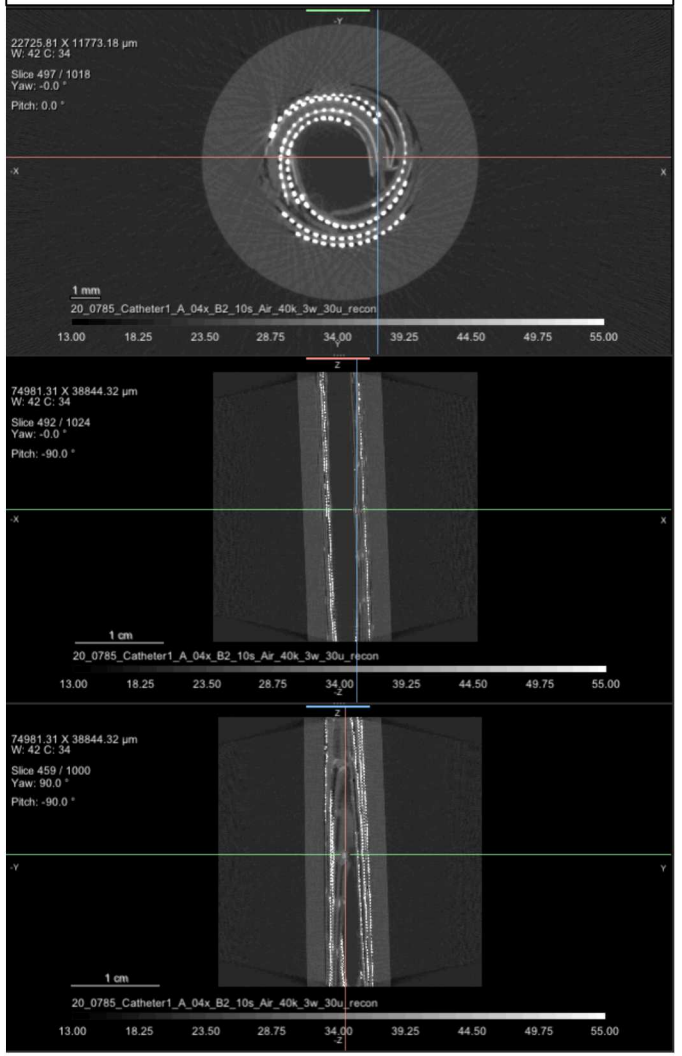
Y-Plane Slice #492



X-Plane Slice #549



Slice views with Cross-hair shown



All data post-processing performed with: DragonflyPro (v3.1). Scans and reconstructions performed on a Zeiss Xradia 520 Versa microCT.

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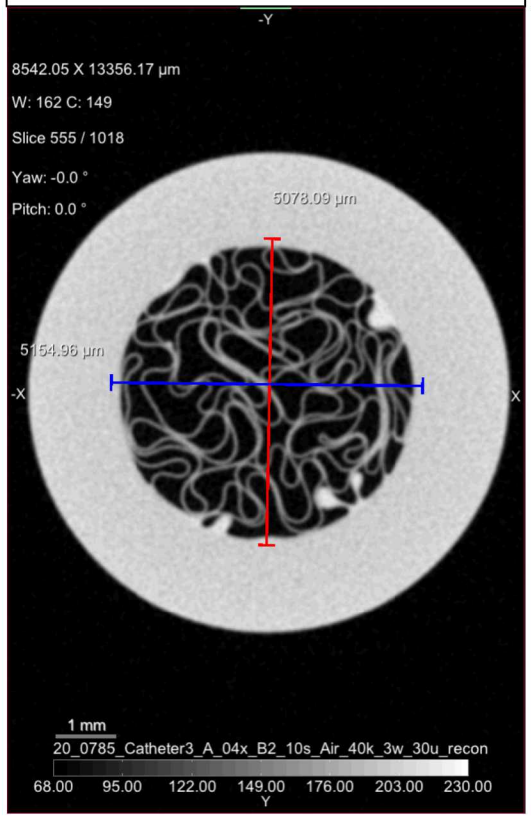
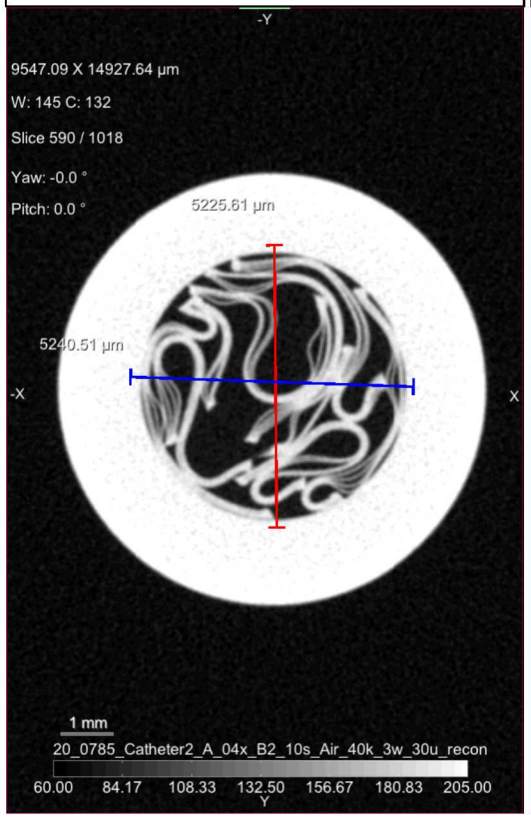
Requests for Simon Dunham

- For the previous three slides could you identify a region on one of the 3 planes (Z, Y, or X) for each sample where you would like us to perform a higher resolution scan.
- What pixel size would you like for the higher resolution scan? The smallest possible would be ~0.7 um pixel size with a limited field of view of ~700 um wide.
- The three images at the right give an approximate field of view and the associated pixel size (designated by the measurement annotations) if just the interior of the tube is within the scan focus.

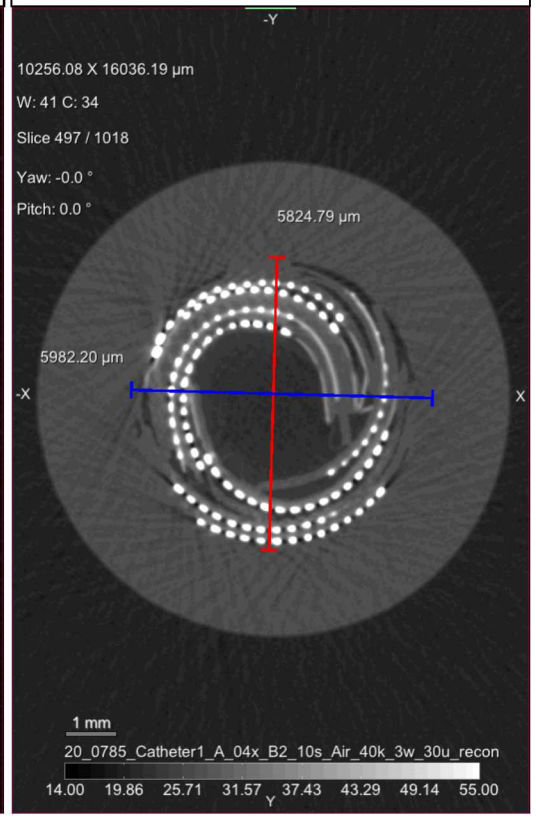
Catheter 3 focusing within tube (~FOV ~5200 um) would give a pixel size of ~5.2 um



Catheter 2 focusing within tube (~FOV ~5500 um) would give a pixel size of ~5.5 um



Catheter 1 focusing within tube (~FOV ~6000 um) would give a pixel size of ~6 um



All data post-processing performed with: DragonflyPro (v3.1). Scans and reconstructions performed on a Zeiss Xradia 520 Versa microCT.